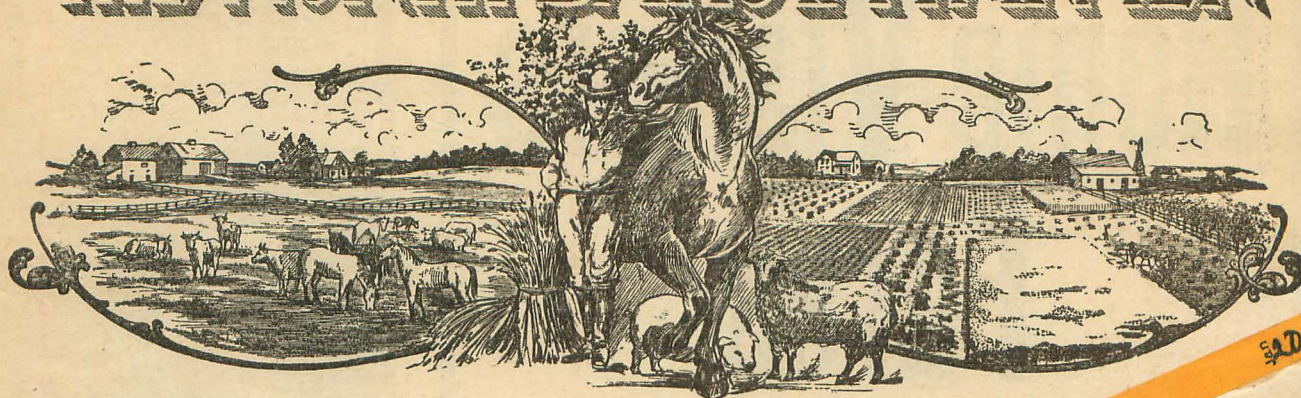


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THE NORTH DAKOTA FARMER



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Alex Alin

Lisbon, N. D.

December 15, 1916

Vol. 18, No. 6



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THE NORTH DAKOTA FARMER

Vol. 18 No. 6

LISBON, N. D., DECEMBER 15, 1916

75 Cents a Year

Let Us Reason Together

Necessity for Encouraging Dairying in North Dakota

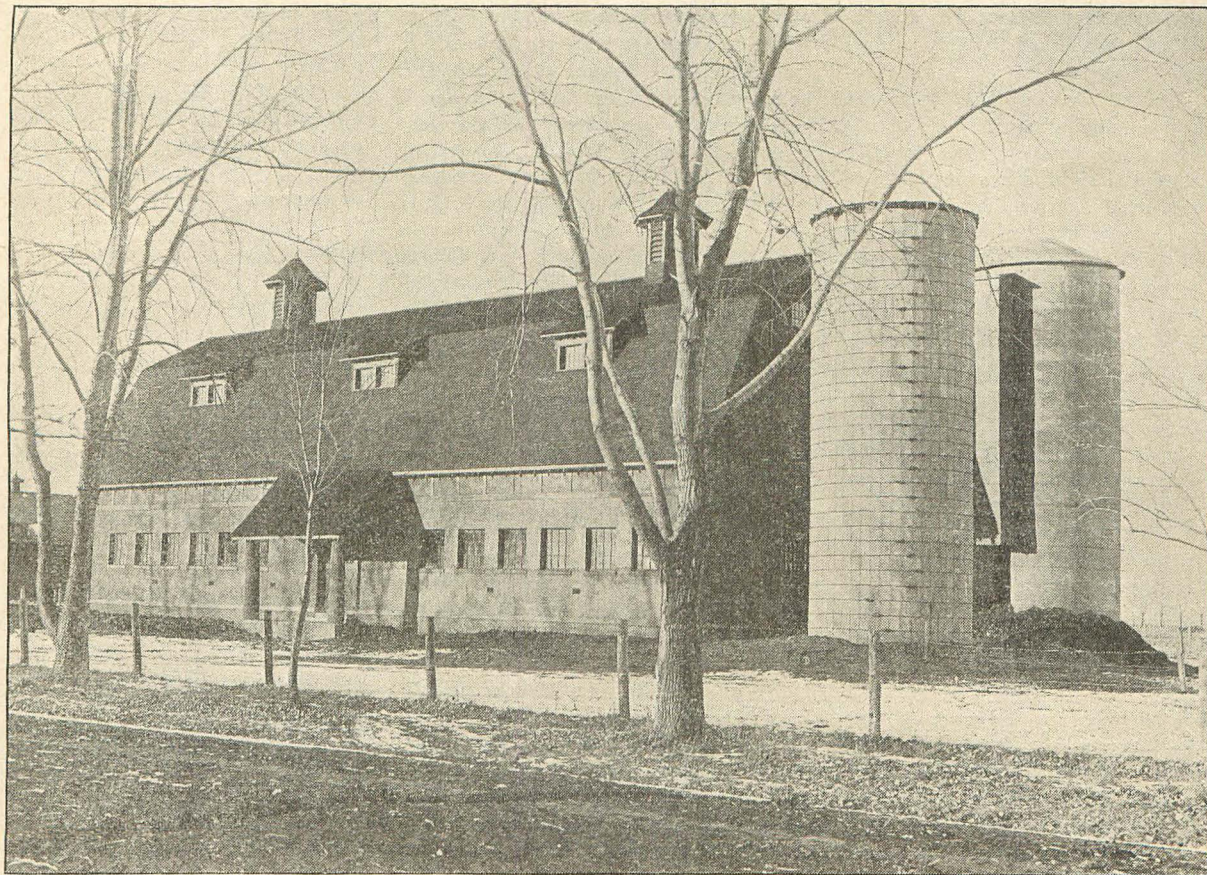
By W. P. Heath

I Shall try to bring before you some of the principal reasons why North Dakota should bring about a flourishing dairy industry at the earliest possible moment. The first reason is this—dairy-

tation. Thirty years ago the early pioneers found themselves endowed by an unstinting nature which furnished this state with unusual fertility of soil. The majority of the farmers with careless indifference to the de-

for even nature cannot give those elements which she does not possess. A system of more diversified farming must be resorted to whereby the missing elements may be replenished to the impoverished soil before we may expect permanent success. The present condition of the soil of too many of our farms has not been brought about by a stinting nature, but because we have not cooperated with nature intelligently.

She will give to the farmers of North Dakota more wheat from the



Dairy Barn at N. D. Agricultural College. Note the two ventilator exits on the roof and the number of windows

ing takes less fertility out of the soil than any other form of agriculture, and it is of inestimable value in following a well regulated system of ro-

mands of nature, have not given any equivalent in return for the elements taken from the soil. This has resulted in a great waste of labor and money,

same amount of land and a handsomer profit from the dairy as well, provided the farmers do their part. The present impoverished condition of

many of our farms is so painfully evident it needs no proof and we have here then the most potent force which is bringing about an urgent need of an increased dairy industry. By following a rotation of crops, stock raising, the saving of manures, and by the dairy industry, North Dakota farmers may hope to perpetuate the successful raising of wheat but until then, and not until then, can we hope to successfully compete with the newer soil and the daughters as well as the sons of our North Dakota farmers should be well informed in dairying, not of Canada, Siberia, Argentine and Russia.

But there is still another force which is at work slowly but surely hastening the coming of a great dairy industry in our state. I refer to transportation. The carriage of all farm products is paid eventually by the producer. Altho situated far from a market for our grains we find a market both east and west for all our dairy products. A car of butter, representing the same amount of wealth as twenty cars of wheat, costs but \$300 as against \$5000 for transportation to a distant market. Here, then, we would find at least a solution of the congested railway center problem. The farmers of North Dakota, situated as they are upon the map and paying what they do annually for transportation, will readily appreciate the significance of this fact and the need of producing a more condensed product which can be shipped for 6 per cent the cost of shipping its equivalent in wheat. We not only save in transportation expense because dairy products are more condensed, but also because we don't have to ship them so far.

Again, statistics show that the use of butter and cheese as articles of food is rapidly increasing and the price is rising rapidly, for strange as it may seem, the records show that there is a smaller percentage of cows in the world today in proportion to the population than ever before. The demand for dairy products is unlimited, and so long as a good quality is maintained a profitable price can always be secured. Another reason for advocating the dairy industry is the fact of its reliability. A cow will give a quick and sure return. The farmers of North Dakota have sad evidence of the fact that altho the raising of feed is infallible, the production of salable grains is extremely uncertain. The cow gives a profit from the soil direct, greater than wheat because it is a more finished product, more speedily because we do not have to wait for months for an uncertain crop. The monthly check from the dairy pro-

vides the mainstay of the household as against precarious returns from a yearly crop. It has always been found that in mixed farming the income from the dairy is the most reliable. The farmer who has a dairy, in addition to the dairy products sold, is always supplied with an abundance of fresh milk and cream, butter and cheese. Not only with the dairy products directly but also with bacon, pork and veal, for it is upon the by-products of the dairy, skim milk, whey and buttermilk, that pigs and calves thrive, affording a new source of revenue to the farmer which he is too often unwilling to attribute to the unfailing dairy cow.

Again it is necessary for North Dakotans to take up dairying at the earliest opportunity, because it aids in eliminating one of the obstacles characteristic of our present system of farming. I refer to the hired help problem and the great need in North Dakota of population. Dairying gives employment to more people and gives it all the year round. All occupations in North Dakota are and will be tributary to the soil. Our farms at the present time are vastly too large and competent help extremely hard to secure. The best help we have comes from the ideal 160-acre farm, and this help would be found in abundance if employment were offered all the year round. Dairying affords interesting work of a light character to every member of the household, necessarily undertaking the more difficult tasks pertaining to the industry, but able to understand and discuss intelligently all those things which pertain to the dairy.

We find that after years of experience traders, bankers and men of finance everywhere recognize the fact that wherever dairying is conducted farmers are more prosperous, mortgages rarely found, and the value of land considerably enhanced. I think I am right when I offer this as an explanation, that in addition to being a profitable industry in itself, it makes other phases of farming more profitable by the inculcation of habits of industry, cleanliness, punctuality and thrift on the farm in general. Social improvement has always been the result of more intense and diversified farming, for it involves more intelligent farming. In this connection it is interesting to note that at the close of the Minnesota cow census the 100 patrons were divided into two groups, sixty-three who read dairy and agricultural papers and thirty-seven who did not. The readers received for each dollar's worth of feed consumed by their cows \$1.38 and the non-readers 87 cents, the former receiving a net profit of \$10 per cow and the

latter losing \$3. The importance of keeping well informed if you intend to embark in dairying cannot be emphasized too much.

Now, the idea of North Dakota becoming a great dairy state is no idle theory, as has been demonstrated by the success of southern Minnesota. They were driven by necessity to adopt dairying because of drouth and rust, and today we find there a state of prosperity unequaled in the great west. Well tilled, fertile farms and the splendid homes of the prosperous, happy farmers are everywhere in evidence, and what is true of southern Minnesota can be of North Dakota. Surely we have a climate conducive to a prosperous dairy industry, and this, together with our abundance of winter feeds and grass, will afford the best quality of butter and cheese, and there is surely a need in North Dakota of better dairy products.

To recapitulate, North Dakota farmers are beginning to realize that dairying in North Dakota is desirable because we find ourselves confronted with serious problems which make it necessary, problems of labor, transportation, fertility and competition. It is imperative to maintain a fertile soil in North Dakota to successfully compete with the newer soil of Argentine, Canada, Russia and Siberia. Dairy products are becoming more popular as articles of food and the price is rapidly increasing. The production of winter feed in North Dakota is infallible and dairying may be depended upon as the most reliable of all phases of farming, yielding a steady income every day in the year from the dairy and from the veal and pork raised largely upon dairy by-products.

If there is any one thing which North Dakota needs it is population, and dairying tends to more intensive and diversified farming, and hence a greater population. Let us look forward to the time when we shall have our population quadrupled in the state of North Dakota, large and more prosperous towns built up by the farmers who have been taught by a bitter experience, that more intensive farming is the only solution of our present perplexing problems, and that of all forms of agriculture dairying is the most conducive to happiness and prosperity.

The cow which yields a generous return for the food consumed is the cow for profit and the one which it will pay to feed generously. But such cows must have the raw material out of which to manufacture milk. It is only the amount they consume over and above the food of support that can be used for milk production.

The Boys' and Girls' Institute

The Seventh Annual Boys' and Girls' Institute met December 12th to last until Friday the 15th. The meeting was opened by an address of welcome by Director Cooper and response was given by the President of the Institute, Francis Kelsh of Dickey County. Following this the regular work of the Institute was begun, which consisted of lessons and demonstrations in Agriculture and Home Economics.

Tuesday afternoon the Institute enjoyed the privilege of attending Grand Opera, thru the courtesy of the Manager, Mr. Fortune Gallo.

Wednesday afternoon thru the courtesy of the Commercial Club and its Secretary, Mr. Hardy, the members enjoyed a luncheon at the Auditorium, followed by a trip to the Power Plant, Fire Department, Manchester Biscuit Company and Ford Plant. At the conclusion of this trip thru the generosity of Mr. Phillips, Manager of the Garrick Theatre, the members were admitted to the performance on their badges.

Friday morning at 11:30 the business session was called to order by the President, Francis Kelsh. Ida Eddinger gave the Secretary's report for 1915. Percy Jud in the unavoidable absence of his brother, Horace Jud, Treasurer of the Institute, gave the report, showing a balance on hand of \$47.25. Upon motion the organization voted to allow the expenses of the attending officers, Francis Kelsh and Ida Eddinger. The motion was made, seconded and carried that \$3.00 be taken from the funds of the Institute to purchase a remembrance for the Treasurer, Horace Jud, who was confined at home with a broken leg. The report of the Resolutions Committee, consisting of Peter Anderson, William Velure and Edna Hamilton, was read and accepted. The Nominations Committee presented the names of officers of 1916 as follows: President, Marie Maroux, Williams County; Vice President, Alfred Swartz, Billings County; Secretary, Thema Young, Pierce County; Treasurer, Theodore Lindahl, Benson County. Upon motion the report was accepted and the officers unanimously elected. The meeting was adjourned to meet in December, 1917.

The Garden Canning Contest consisted of two parts. First, the planting and growing of a garden two rods square, the keeping of the records of the cost of production and the vegetables taken from the same. The second part consisted of the canning of at least twenty quarts of vegetables.

The contestants in this project were judged on the yield, the net profit, the exhibit of canned vegetables, the record and story. The three girls taking first place reported

The Garment Making Project consisted of three lessons which were sent out to the girls who did the work at their homes or at their clubs. This work was done without the direction of a regular Domestic Science teacher. It had for its main objects the making and repairing of plain garments, and



Members of the 1916 Institute with their Chaperons

net profits of \$27, \$25, and \$33 respectively. Judged on these four points mentioned above the girls made scores of: Thelma Young, Pierce County, 97; Mabel Dougherty, Ransom County, 94; Mildred Kenyon, Ransom County, 93.

consisted of Lesson 1—Apron cap, sleeves, darning; Lesson 2— Night gown, patching; Lesson 3—Drawers, fasteners. At the conclusion of each lesson a report was sent in which gave the time used in making and the cost of material, followed by a story

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of the entire sewing project.

The work was of excellent quality. The three girls taking highest places were: First, Anna McDonald, Dickey County; Second Mildred Pierce, Dickey County; Third Gertrud Mandt, Grand Forks County.

Winners in the livestock judging contest are as follows:

In the dairy division: First, Charles Lehrt, Cavalier County; second, Lester Guss, Pierce; three tied for third place, Martin Anderson, Pembina County, Paul Reddig, Wells, and Herman Thelan, Benson.

Hog judging: First, Charles Lehrt, Cavalier County; second, Howard Brumwell, Cavalier; third, Eugene Graham, Richland.

Beef cattle judging: Charles Lehrt and Charles Anderson of Richland County tied for first place, Theodore Lindahl of Benson County was second.

Horse judging: First Einert Peterson of Walsh County; second, Hagle Brown of Benson; for the third place, Chas. Ankenny of Dickey County, and Martin Anderson of Pembina tied.

List of Boys And Girls At Institute

Barnes County: Clara L. Larson, chaperon

Dorothy Tucker, Sanborn; Marguerite Gudmestad, Valley City; William Veloire, Hastings; Leonard Stephan, Sanborn; Erwin Gangestad, Hastings; Lillian Johnson, Nome; Mabel Kvislen, Sanborn;

Benson County: Peter Anderson, Mrs. Anderson, chaperons.

Julia Brye, Minnewaukon; Leona Olson, Esmond; Myrtle Peterson, Maddock; Theodore Lindahl, Maddock; Herman Thelen, Hamar; Hagle Brown, Sheyenne; Fred Wallace, Tokio; George Loudon, Devils Lake.

Billings County: Mrs. V. E. Pehrson, chaperon.

Walter Schwartz, Belfield; Alfred Schwartz, Belfield.

Bottineau County: Annie D. Burr, chaperon.

Frank Parezyk, Bottineau; Lawrence Racine, Maxbass; Percy Cornwall, Kramer

Cavalier County: S. J. A. Boyd, chaperon.

Lucy Dunn, Nekoma; Mabel Ben-

son, Milton; Mary Schill, Wales; Beatrice Brudahl, Osnabrock; Matilda Epp, Munich; Chas. Seht, Milton; Howard Brumwell, Sarles.

Dickey County: Clara N. Fleming-ton, chaperon

Francis Kelsh, Fullerton; Leonard Johnson, Oakes; Verble Couch, Monango; Milton Pierce, Ellendale; Frank Hardin, Ellendale; Charles Ankeney, Oakes; Arthur Arndt, Fullerton; Harold Denison, Guelph; Mildred Pierce, Ellendale; Opal Couch, Monango; Irene Huber, Oakes; Mary Alin, Fullerton.

Cass County: Mr. Landbloom, chaperon.

Edwin Boettcher, Arthur; Ruby Brock, Page; Mabel Stark, Absaraka; Ethel McGuigan, Chaffee; Grant McKay, Chaffee; Erling Anderson, Buffalo; Orion Fraederick, Elster; Eva Rabillard, Wild Rice; Anna Matthys, Fargo Dist. 7; Minnie Vinge, Gardner; May Anderson, Harwood; Glenn Scott, Erie; Hulda Krabbenhoft, Leonard Dist. 5.

Richland County: Chas. Hanson, chaperon.

Eugene Graham, Clarence Anderson, Marvel Hardina, Ruth Flinto, Gina Flinto.

Grand Forks County: Elizabeth Burr, chaperon.

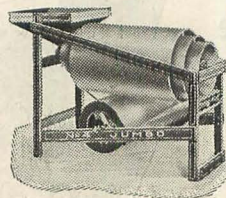
Alice Larivee, Grand Forks, R. F. D.; Emma Strutz, Thompson; Gertrude Mandt, Northwood; Edward Gregoire, Merrifield; Robert Bell, Arvilla; Henry Schmidt, Emerado.

La Moure County: Cora E. Sabin, chaperon.

Alfred Neilson, Marion; Albert Neilson, Marion; Frances Neilson, Marion; Mary Clark, Grand Rapids; Clara Holtgard, Marion; Mrs. Neilson, Marion; Richard Sabin, La Moure.

Pembina County: Charlotte A. Jones, chaperon.

Elizabeth McHolland, Cavalier; Martin Anderson, Hamilton.



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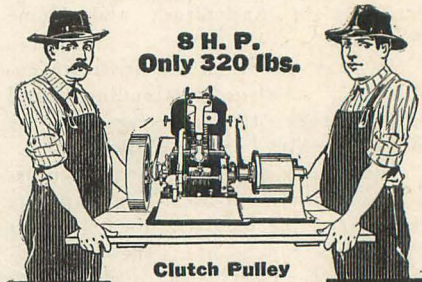
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Pierce County: Sara C. Guss, chaperon.

Effie Sterns, Pleasant Lake; Grace Larson, Knox; Selma Schmutzler, Rugby; Thelma Young, Balta; Alpha Aubol, Berwick; Lester Guss, Wolford; Gilbert Braaten, Wolford; Herbert Else, York.

Ransom County: Marjorie Knapp, Deputy Supt., chaperon.

Mable Dougherty, Elliott; Arthur Granlund, McLeod; Margaret Kenyon, Ft. Ransom.

Ramsey County: Helen E. Haig, chaperon.

Hilda Bryn, Devils Lake; Emma Bryn, Devils Lake; Viola Merrick, Devils Lake; Everett Horne, Penn; Charles Flimmerfelt, Devils Lake; Leo Johnson, Grand Harbor.

Rolette County: Helen Packard, chaperon.

Emma Lizotte, Rolette; Alfred Tetrault, Rolette.

Towner County: Mamie Sorenson, chaperon.

Fay Beisel, Newville; Joe Beisel, Newville; Virginia Wisler, Cando; Estie Leonard, Rock Lake; Roy Kaufman, Cando; Harold Timms, Cando; Percy Judd, Cando.

Walsh County: Nellie B. Hanson, chaperon.

Harold Oen, Park River; Eilert Pederson, Grafton; Joseph Rylick, Rorest River; Selma Tverberg, Grafton; Lillie Gjun, Grafton; Emma Erickson, Lankin.

Wells County: Miss Nertrost, chaperon.

Tillie Fiebich, Manfred; Marjorie Smith, Cathay; Ida Edinger, Cathay; Paul Reddig, Cathay; Teddy Weiss, Fessenden.

Williams County: Miss R. Palmer, chaperon.

Marie Marcoux, Tioga; Edna Hamilton, Williston; Urton Dillon, Trenton; Peter Bronder, Williston; Swen Kleppe, Springbrook.

THE RESOLUTIONS

We wish to extend our thanks to Mr. Thomas Cooper for his inspiring encouragement and able direction of our club work and especially do we extend our thanks and express our appreciation to Miss Helen Sullivan, who during the past two years has been in charge of club work, for her enthusiastic leadership, inspirational guidance and we also give expression to our joy that she will continue in our club work. We wish also to thank the faculty of the Agricultural College and all others who have assisted in carrying out the work of this Institute and in making it a satisfying success.

We desire further to express our heartfelt gratefulness and extend our

sincere thanks to the City of Fargo, its business men and to its Commercial Club with its big-hearted and hospitable Secretary, Mr. Hardy, for the many courtesies shown us, for the hospitality and enjoyable entertainment offered us while here

We are especially grateful to Mr. Fortune Gallo, Manager of the Grand Opera Company, for his kindness and liberality in making it possible for us to hear the Grand Opera. We highly appreciated this.

We wish also to express our gratitude to Mr. Phillips, Manager of the Garrick Theatre, who so generously entertained the boys and girls at his theatre.

We are furthermore very grateful and under deep obligation to the men and women of the various communities from which we came, who by their financial aid and kind encouragement make it possible for boys and girls to come annually to this Institute. We desire to acknowledge our obligations and to state our thankfulness.

We wish to extend our hearty welcome to Mr. D. W. Galehouse, our new State Boys' and Girls' Club

Leader and we pledge to him our most loyal support.

We also resolve that we pledge ourselves as we go back to our several communities to encourage other boys and girls to become achievement boys and girls and we pledge ourselves also in all worthy undertakings thruout our lives, to continue to be real achievement boys and girls.

Be it further resolved that a copy of these resolutions be sent to Mr. Hardy, Secretary of the Fargo Commercial Club, to Mr. Fortune Gallo,

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Wm. Velure
 Edna Hamilton
 Peter Anderson

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January 16-19, 1917, Fargo, N. D.

Tuesday, January 16

"Growing and Marketing Seed Potatoes": C. E. Brown, St. Anthony Park, Minn.

"A Farmer's Experience in Corn Breeding": Otto Uhlhorn, Lisbon, N. Dak.

Appointment of Committees.

"Making Clover and Alfalfa Hay": J. G. Haney, Grand Forks, N. D.

"Rural Education": C. G. Carlson, Valley City, N. D.

"Agricultural Reminiscences": J. H. Worst, New Rockford, N. D.

"Lessons Learned from North Dakota's Twenty-five Years' Experience

in Tree Growing": E. C. Hilborn, Valley City, N. D.

Wednesday, January 17th

"What Should the Farmers of the Northwest undertake in the way of Fruit Growing?": R. S. Mackintosh, St. Anthony Park, Minn.

Federal Farm Loan Act": Herbert Quick of Federal Farm Loan Board. Discussion.

"Wheat Rust and Methods of Control": E. C. Stakman, St. Anthony Park, Minn.

"The Farmer and Legislation": J. C. Coates.

"Feeding Problems of the Northwestern Farmers": J. H. Shepperd, Fargo, N. D.

Discussion of Packing Plant: L. C. Hoopman, Wausau, Wis.

"What has been Accomplished in Minnesota in Making Good Roads and Road Laws": Chas. E. Forbes, St. Paul, Minn.

Thursday, January 18th

"What the Office of Commissioner of Agriculture can do to Assist the Farmer": J. N. Hagen, Bismarck, N. Dak.

"Dairying as a Farm Industry on Grain Farms": C. Larson, Brookings, S. D.

"Market Value and Milling Value of Wheat": E. F. Ladd, Fargo, N. D.

"Taxation": G. E. Wallace, Bismarck, N. D.

"The Use of Survey Studies in Solving Farm Problems": J. S. Cates, Washington, D. C.

"Poultry as a Profitable Farm Crop": N. E. Chapman, St. Paul, Minn.

Friday, January 19th

"The Profitable Farm Unit": Thomas Cooper, Agricultural College, N. D.

"Farmers' Grain Marketing Organization": Robert McKenzie, Winnipeg, Man.

"North Dakota Society of Equity": M. V. Boddy, Fargo, N. D.

"Equity Exchange": J. M. Anderson, St. Paul, Minn.

"Deeds and Contracts": J. F. Callahan, Casselton, N. D.

"The Labor Problem": T. L. Stanley, Bismarck, N. D.

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Prof. P. G. Holden, Director Agricultural Extension Department, International Harvester Company

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terial, and cannot be used by plants as food.

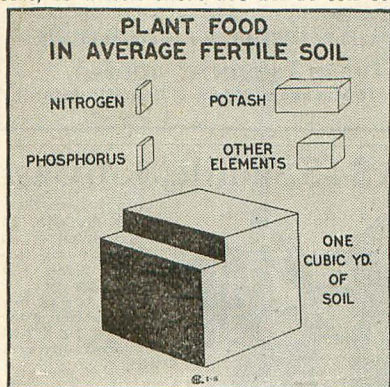
When this fertility has once been exhausted, it is gone forever and will not return except as it is purchased in one form or another—mostly as high-priced commercial fertilizers.

It is either commercial fertilizers or else there must be more clover and alfalfa, more stock, better care of manure, and a more systematic rotation of crops. There is no escape from these facts. Which shall it be?

The accompanying chart shows the average amount of plant food contained in one cubic yard of Illinois black clay loam, a good type of fertile soil, weighing approximately one ton:

Nitrogen.....	3.44 lbs.
Phosphorus.....	3.71 lbs.
Potash.....	64.27 lbs.

A fertile soil is one containing an abundance of available plant food material, of which there are about ten es-



sential elements. They are,—nitrogen, phosphorus, potash, calcium, iron, sulphur, magnesium, hydrogen, oxygen, and carbon. Six of these—phosphorus, potash, calcium, iron, sulphur, and magnesium are found in the mineral part of the soil; nitrogen is contained in the humus; hydrogen and oxygen are principally supplied by water; and carbon comes from the air.

Three of these—nitrogen, phosphorus, and potash, are often deficient in the soil; or, if present, not in available form for the plant to use. These are the elements which need the consideration of the farmer. They are absolutely essential to the growing of crops.

1. Nitrogen—promotes growth of stalk and leaves.
2. Phosphorus—tends mainly to increase fruitfulness.
3. Potash—develops hardness and firmness of leaves and stems.

CORN, OATS, WHEAT FOR FEED

In an experiment at the Wisconsin Experiment Station three lots of heifers weighing about 350 pounds were fed equal amounts of nutrients. For one lot the nutrients were wholly from the wheat plant, another from oats and the third from corn. All

lots grew at about a normal rate, but after a few months it became easily observable that the wheat lot was not so well nourished as the others. This was evident from the appearance of the coat. The corn and oat fed lots bred earlier than the wheat fed one, showing that the fatter were depressed in some degree. The corn fed lot produced calves which were of normal size and full of vigor. The oat lot produced calves, which were of about normal size but with very low vigor, while those from the wheat lot were about half as large as the normal calf at birth and were dead or ready to die when born. When half of the roughage of wheat lot was replaced with alfalfa the calves were normal.

No reasons have yet been worked out as to why these foods should act so differently but it is important to know how they affect animals.



PRICE LIST and book of valuable information **Free**. Tells best way to care for hides intended for tanning. We own and operate the largest custom tannery in the country, tanning hides into robes, coats and leather, direct for farmers. In business since 1894 and under same management. For quick service and best tanning, write:

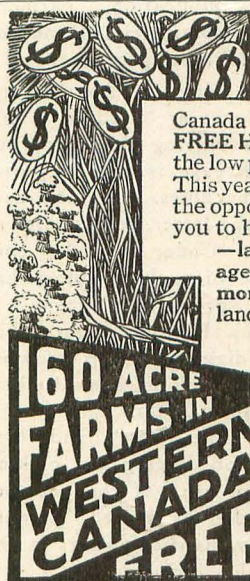
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Dept. 21 : Crookston, Minn.

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We have a big demand for these and will pay you the highest market prices. Write for our price list before selling.

LaCrosse Fur & Hide Co.,

214 Front St., La Crosse, Wisconsin

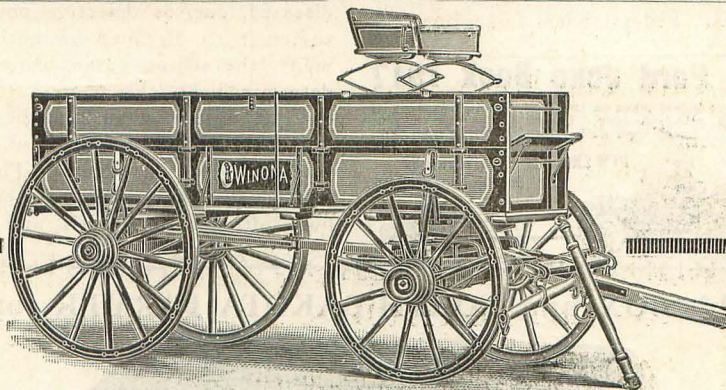


Raise High Priced Wheat on Fertile Canadian Soil

Canada extends to you a hearty invitation to settle on her **FREE Homestead lands of 160 acres each** or secure some of the low priced lands in **Manitoba, Saskatchewan and Alberta**. This year wheat is higher but Canadian land just as cheap, so the opportunity is more attractive than ever. Canada wants you to help feed the world by tilling some of her fertile soil—land similar to that which during many years has averaged 20 to 45 bushels of wheat to the acre. Think of the money you can make with wheat around \$2 a bushel and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed farming in Western Canada is as profitable an industry as grain growing.

The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

W. E. BLACK,
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Canadian Government Agent.



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THE Winona is the strongest, lightest-draft farm wagon you can buy. Axles won't break—rims won't split—hubs won't check—boxes will stand the siege of steady use. If you want a fine-looking wagon that will give you uncommon length of service, see the Winona.

WINONA FARM WAGON

BUILT from tough, solid, "bone dry" seasoned timber—ironed with extraordinary care. Outer Bearing Axles, full Clipped Gear, Riveted Bent Felloes. Strongest Skeins, Poles and Hounds. Boxes extra cleated and braced. Comfortable Seats. Durably painted with best quality paints.

Write for Catalog **F** showing many exclusive features of the Winona.

WINONA WAGON COMPANY, Winona, Minn.

FAKE PROMOTERS

North Dakota Farmer:

Information has come to the Federal Farm Loan Board that in various parts of the country certain parties are soliciting subscriptions to stock company organizations under different names, claimed to be operated under the Federal Farm Loan Act, and asking advance payment of such subscriptions, especially from farmers.

The members of the Federal Farm Loan Board are now engaged in the work of organization, holding hearings in various cities for the purpose of securing information with a view of determining the boundaries of twelve Federal Land Bank districts, and the location of one land bank in each district. Until these land banks are established, no loans can be made.

The representation by any person that any organization is now offering to make loans by authority of the Farm Loan Board under the Federal Farm Loan Act is false, and any attempt to collect money under such representation is fraudulent and is punishable by fine and imprisonment under Section 71 of said Act.

It is desirable that farmers should discuss among themselves the benefits to be derived from the Federal Farm Loan Act and to take preliminary steps for the organization of National Farm Loan Associations as soon as the Federal Land Banks have been established, but no money should now be paid in connection therewith to any person for stock or expenses, no matter what the representation may be.

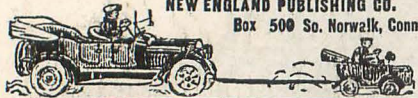
W. W. Flannagan,

Sec., Federal Farm Loan Board.

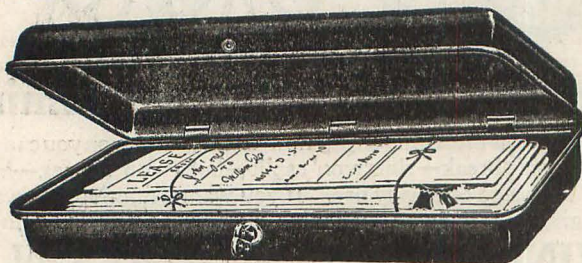
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STEEL DOCUMENT BOX

Size 5x11x2. Price, with two keys, 75 cents, post paid. Send \$1.00. We'll enter or renew your subscription to

North Dakota Farmer for one year and send box post paid
NORTH DAKOTA FARMER, : : LISBON, N. D.

POTATO DEPARTMENT

H. O. Werner, Secy. N. D. Potatoe Assn.

HANDLING AND MARKETING POTATOES

In order that the present large losses of potatoes may be eliminated and that conditions in the potato growing industry may be bettered in general, growers should exercise much more care in digging and handling the tubers, should work toward the establishment and strict observance of grades, and should carefully study marketing needs and conditions. This is the advice of specialists of the Office of Markets and Rural Organization of the U. S. Department of Agriculture in a recent publication, Farmers' Bulletin 753, "Commercial Handling, Grading, and Marketing of Potatoes."

Potatoes are dug in August and September. Forks are used to a certain extent for digging this crop, but most of the acreage is dug by plows and digging machines. For the successful use of the latter, soil conditions must be good. Under favorable conditions the use of such machines has been found profitable. There is much loss from bruising potatoes in all types of digging. Deep plowing with plows and machines should eliminate most of such losses.

Picking is mostly by hand, but some combination digging and picking machines are in use. If the potatoes are to be graded as picked, growers should carefully instruct pickers in the work, since the inclusion of a few diseased, cut, or defective potatoes is sufficient to discount an entire shipment, the selling value being largely determined by the poorest tubers in the lot rather than the best. The crop may be injured by hauling from the field loose in wagons. This practice usually involves subsequent handling, often with shovels and scoops,

Auctioneers

Make \$10 to \$50 per day. How would you like to be one of them! Next four weeks' term opens Jan. 1. Write for big free catalogue.

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LARGEST IN THE WORLD

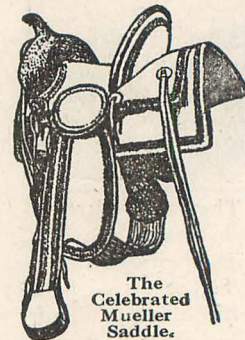
W. B. Carpenter, Pres., 818 Walnut St., 3rd Floor
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MINNESOTA FARM
FOR SALE

160 acres good clay loam land 3 miles from Leonard, Beltrami County, Minnesota. On state road, 1 mile to school and church. 40 acres under cultivation, balance fenced for pasture. House, barn, granaary and other buildings in good condition. Scandinavian settlement. A bargain at \$30 per acre on easy terms. Write for particulars to

CLAYTON C. CROSS,
18 Markham Bldg., Bemidji, Minn.

A\$45 Saddle, \$36 Cash



Our latest Swell Fork Saddle, 14-inch swell front, 28-in. wool-lined skirt, 3-in. stirrup leather, rig, made of best oak leather, guaranteed beef hide covered solid steel ork.

THE FRED
MUELLER

Saddle & Harness Co., Dept. R. 1413-15-17-19 Larimer St. Denver, Colo. Send in your name for our catalogue now ready.

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There must be a reason why there is such a demand for Justin's Boots. If you are going to wear boots, why not wear the best? Yours for the Best Cowboy Boots Made. Send us your address on a postal card and we will send you our catalogue, and self-measuring system.

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H. J. JUSTIN & SONS

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Do Business by Mail

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Contractors	Tin Can Mfrs.
Druggists	Farmers, Etc.

Write for this valuable reference book; also prices and samples of fac-simile letters. Have us write or revise your Sales Letters.

Ross-Gould, 830 Olive St.

Ross-Gould
Mailing
Lists St. Louis

which further bruises the potatoes. A good practice, say specialists of the Department, is to pick the potatoes into open-slatted crates and haul the filled receptacles to storage or grading houses or to cars.

Grading

Many sizing machines are used to grade potatoes and, since they give more accurate results than hand grading, their use should be extended. In addition to sorting, these machines are of service in removing dirt. This is an important fact since there are many complaints by buyers of the presence of dirt among potatoes and greater allowances are being demanded in price adjustments on this account. The mechanical sizer simply sorts as to size and the stock must be further graded by hand to eliminate potatoes affected by sunburn, dry rot, scabs, frost, or other defects.

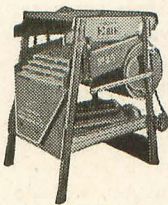
All grading should be done preferably on the farm. If the grower ships ungraded stock to market, it must be graded there where labor is more costly. In addition to paying, in lower prices received, for this labor, he also pays freight on the rejected potatoes and loses the culls, which he might have utilized on the farm. Grading is facilitated where the grower has sufficient storage space for a large part of his crop. In this way potatoes which do not show the effects of frost or other damage when first dug may be detected later and sorted out before the crop is marketed. If the potatoes are shipped without sorting, the damage usually brings about rotting of the injured potatoes before the market is reached and reduces prices on the whole shipment.

Standardization

The specialists of the Department do not make specific recommendations for the adoption of standard grades, but, for the assistance of those interested in bringing about standardization, they suggest that two regular grades and perhaps a special grade for extra fancy potatoes should meet market needs. It is suggested that specifications for the No. 1 grade should be drawn to make it as good and attractive in appearance as is reasonable and practicable. These specifications should practically eliminate potatoes damaged by frost, sunburn, blight, common scab, dry rot, decay, second growth, cuts, bruises, dirt, and also undersized or coarse stock. The minimum and maximum sizes for both No. 1 and No. 2 grades are still a subject for careful investigation, discussion, and demonstration. However, a minimum of about 2 inches is maintained for grade No. 1 in a number of early or "new" potato sec-

tions, and the commonly discussed minimum for this grade is from one and seven-eighths to two inches. The minimum diameter for a long variety should probably be a little smaller than for a round one. Since it is

practically impossible in grading any perishable products commercially to secure a perfect grade, reasonable tolerances should be allowed. The No. 2 grade should include the better of the remaining potatoes.



Improved Erie Cleaner and Grader. In our Erie you will find a new fanning mill to separate Oats from Wheat and Barley and grades it better than any mill made. This we do on our new roll system in place of a flat screen as all others have. This also takes cockle out, that others cannot do. This is the only way to grade by rolls; cleans all grain perfectly, also Grass Seed and Flax. We guarantee a perfect grader in our ERIE mill. Wild Oats separator every Farmer needs, to get clean Seed Oats. We have also a perfect Smut machine. Every machine guaranteed. Buy no other until you have written us for full particulars. Write at once for Catalog "B".

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DURUM WHEAT also MILLET SEED

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Reboring and Grinding of Cylinders

This is the time to fit up your steam engines and gas tractors for the coming season

We can rebores and grind your cylinders, fit new oversize pistons and rings, make and fit new crank pins, straighten shafts, bore and bush gears and clutches or do any kind of machine work. Refue boilers and replace stay bolts. We carry in stock all sizes of stay bolts, patch bolts, bracket bolts, rivets, boiler flues, stay-bolt taps and boiler taps, shafting, shaft hangers, cast iron pulleys, woodsplit pulleys. Write and let us quote prices on any work you have.

Craig Brothers, Fargo, N. D.

P. O. Box 295.

Telephone 554 W.

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For the first time since 1911 has the State published a volume of the School Laws, and not until 1919 will another edition be printed by the State.

WOULD YOU KNOW

For what reasons a pupil may be suspended or expelled?
Whether one is allowed to read the Bible in school?
What branches must be taught every day?
For what purposes the school house may be used?
Who may vote on school matters and what are the voters' qualifications?
How schools may be consolidated?
What recourse one has if he is not satisfied with the ratings of the examining board?
Whether free text-books may be adopted without a vote?
What to do when a pupil or parent disturbs the school?
What provision is now made for transportation of pupils?
How pupils may be compelled to attend school?
Whether children may be employed in stores and factories?
How a certificate may be revoked?
What the law is regarding drinking cups, fire escapes, hitching posts, school libraries, pension fund, accredited diplomas, etc.?

THEN ORDER A COPY OF THE LATEST SCHOOL LAWS
Price, post paid, 30 cents.

W. G. Crocker,

Lisbon, North Dakota

North Dakota Farmer

Entered as second class matter at the postoffice at
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PUBLISHED EVERY MONTH

W. G. CROCKER : : PUBLISHER
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O. O. CHURCHILL C. B. WALDRON

H. O. WERNER

Remittance may be made by draft, check, money
order, or stamps if it will accommodate.

Vol. 18 DECEMBER, 1916, No. 6

Eliminate the food speculator.

Get busy. The Federal Loan Banks
will begin loaning in February or the
first part of March.

If taxes were placed upon the land
alone, one-fourth of all the land ready
for cultivation would not be owned by
less than 50,000 persons.

Plan the rotation of your farm now.
It will conserve the fertility, reduce
the amount of work, give larger yields
and retain the moisture.

As the auto brings the family near-
er to the town, so the furnace, cost-
ing one-fifth of the cheapest auto,
brings them nearer to comfort and
health.

Do you realize that more legislation
advantageous to the farmer has been
passed by Congress in the last four
years than in the forty years preced-
ing? Think it over.

County commissioners may incur
criticism at times, but we doubt if
ever for promoting such enterprises as
industrial contests or financing a trip
to the A. C. by the winners.

The long, steady cold of our win-
ters has this advantage: The farmer
may put in a supply of frozen fish at
very little cost, thus furnishing the
family with a most appetizing food.

The weather is busy rusting out the
machinery that is lying in the field
where it was left in the fall. Some
machines on the farm wear three
weeks and rust forty-nine weeks of the
year.

Our Holiday offers seem to take well
with our readers, the women folks es-

pecially. The magazines are all stand-
ard and many a one is worth the price
charged for all. Don't miss the offer
if you appreciate good reading.

In this very lean year the average
yield of wheat on the demonstration
farms was close to 30 bushels per acre,
mainly because wheat was in a rota-
tion with corn on land that had been
manured. Don't call this "plug-hat"
farming. Call it by its proper name:
"Real Farming."

If the Farm and Loan Act will do
for the farmers what the building and
loan associations have done for the
town people, it will prove the greatest
of blessings. Amortization looks like
a formidable word, but it becomes
quite harmless when its meaning in
this connection (*killing off debt by degrees*)
is understood.

Mr. Macdonald's selection of Miss
Helen Sullivan as Assistant Superin-
tendent will be welcomed by both the
children and the grown-ups thruout
the state. Miss Sullivan had charge
of the Boys' and Girls' Institute re-
cently held at the Agricultural Col-
lege. She displayed remarkable ex-
ecutive ability and endeared herself to
the members of the Institute.

The word embargo is obnoxious to
the farmer. Just because he is now
getting a fair price for his products,
those not on the farm are laying at
the farmer's door the high cost of
living, disregarding the fact that he is
now paying more for everything he
uses, clothing, machinery, groceries,
labor, and even for taxes. Place an em-
bargo on munitions and let the farmer
have the use of the laborers thus
let out.

Thruout the state of North Dakota
during January the schools will study
plant diseases and dairying. For this
reason we are publishing articles that
bear upon these subjects. Next
month the subject of horses and of
seed germination will be emphasized.
For this reason the North Dakota
Farmer will prove invaluable in the
homes of progressive farmers. By
following these articles each month a
home-study course may be pursued.

The young man is missing a great
opportunity if he does not attend the
Short Course at the Agricultural Col-
lege. The course was established to
render aid to those who can not at-
tend the full college course. It is not
too late to make arrangements. No
one who has taken this course has
been heard to complain, and the
general verdict is, that it is worth far

more than the cost. Consult the
young folks. Plan to have them at-
tend. You may not be able to leave
them stocks and bonds, but you can
leave them an agricultural education.

One complaint often heard regarding
the bulletins published by the experi-
ment stations and the government is
the too technical descriptions and ex-
planations. The farmer should not
have to exercise more energy in de-
ciphering these bulletins than he does
in carrying out their directions. We
urge every reader to follow carefully
"Chore Boy's" very simple and prac-
tical articles. You may depend ab-
solutely on what he writes. The let-
ters to "Miss Ura Leader" (You're a
leader) are also worthy of your atten-
tion. In fact, we are trying to so
cater to the needs of the farmers of
this section that every article pub-
lished will be seasonable and usable.

We take great pleasure this issue
in publishing the names of the win-
ners at the industrial contests held
the past season thruout the state.
These young people have had a de-
lightful, as well as profitable, outing
at the Agricultural College this month.
Next month we shall publish the best
description of the Institute Week
written by a member. The North
Dakota Farmer has offered a five-
dollar gold piece for the best descrip-
tion, and Mr. Marvin Kirk, who was
the first president of the Insittute, has
offered \$5 more to be given as addi-
tional prizes, \$3 for second prize and
\$2 for third prize. In addition to
these prizes, a year's subscription to
the North Dakota Farmer will be
given to every member of the Insti-
tute who submits a description.

HOLIDAY MAGAZINE OFFER

1. **Today's**, North Dakota Farmer,
Home Life and **Woman's World**, \$80.

2. **Reliable Poultry Journal**,
North Dakota Farmer, **Housewife**,
and **Woman's World**, \$95.

3. **McCall's**, **Woman's World**,
North Dakota Farmer and **Boys'**
Magazine, \$1.20.

4. **Ladies' World**, **Today's**, North
Dakota Farmer, **Woman's World**, \$1.20

5. **Modern Priscilla**, North Dako-
ta Farmer, **Woman's World**, **Today's**,
\$1.20.

6. **Woman's World**, **Metropolitan**
North Dakota Farmer, **People's Home**
Journal, \$1.45.

Order by number.

A pattern with **Today's** or **McCall's**.
Address, North Dakota Farmer,
Lisbon, N. D.

Livestock Department

FARM AND STOCK NOTES

N. J. Shepherd

Sheep should be sheltered from cold rains.

Mixing milk is injurious to the yield of butter.

Regularity is one of the essential conditions in feeding horses.

Fertility is the basis of all successful production from the soil.

The hog that is always kept growing is always finished for market most easily.

If manure is spread as fast as made there will be little waste.

To realize the most profit the dairyman must be a business man as well as a producer.

It is the hog that is kept growing without being overtaxed that makes the best profit.

The better the hog the less the feed costs in the production of a pound of pork.

A sow which is gaining rapidly in flesh just before breeding is more likely to produce a large, healthy litter.

Before a cow is condemned as worthless in the dairy, try what an increase in her rations will do.

In fattening hogs the largest consumption of food consistent with good digestion and health is the most profitable.

A stupid horse will never be well-trained. A knowing horse is easily trained and is therefore the more valuable animal.

Age alone should not send a good brood sow to market, but evidence of failure as a breeder should decide the matter.

To a very considerable extent, it is the amount of labor expended on an article that generally regulates or establishes its value.

A horse that is hard to hold and hard to govern with the reins or lines is always an unpleasant animal to handle and is often dangerous.

While growing, pigs should be well fed. They should never be given so much that they are not ready for the next meal at the appointed time.

The cost of production of any crop is what determines the profit. The actual investment involved is the prime factor in fixing the cost of production.

Farm tests are worth more than all the theories. We must read and study and then use good hard sense in the application of what we read.

An open gait behind may be desirable in a trotter but a draft horse to make the most of his power should travel with his feet under him rather than spraddled.

Poor sheep always have light fleeces but it does not necessarily follow that fat sheep will have large fleeces. A full growing and vigorous condition in the sheep is best.

Blood breeding and feed are the three great factors with which the wool grower by judicious combination can work out success. Money will buy blood but breeding and feeding require skill.

Generally the farmer who makes the greatest success at swine growing is the one who commences in a small way and works to greater numbers as he learns to breed, grow and feed.

In making up a ration for hogs cost must be taken into consideration and the feed given must be such as to produce the greatest number of pounds of gain for the least expenditure.

Every week that a pig is not gaining the food is worse than wasted, because it takes feed and time to overcome the unthrifty habit and all food is lost until growth is resumed.

PERCHERON BREEDERS MEET

The annual meeting of the Percheron Society of America held Monday night, December 4th, at the Congress Hotel, was attended by a tremendous



Purebred Registered HOLSTEIN CATTLE

One of the greatest investigations among dairy breeds was made by experts of the Wisconsin Experiment Station. Prof. F. W. Woll states that the "Holstein cows produced considerably more milk solids and fat than the cows of other breeds (19.5 per cent more butterfat than the Guernseys and 38 per cent more than the Jerseys), and they also give larger net returns for feed consumed." In all dairy breed competitions where Holsteins entered have been representative, they have produced a greater net profit for butter than any other breed entered. There's big money in the big "Black and White" Holsteins.

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F.L. Houghton, Sec'y Box 267, Brattleboro, Vt.

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Cogswell, N. D.

Will quote you special prices at any time on Angus Cattle, Feeding and Breeding Sheep, Shetland Ponies, Duroc Jersey Hogs, Wolf Hounds, Collies, Rat, Bird Dogs and other breeds, Angora Cats. All varieties of chickens, turkeys, geese, ducks, guineas, pheasants, rabbits, ferrets. Pets. Live Foxes, Skunks, Mink and Badgers.

Bixby's Red Polls

My herd bull, J. D. Merryweather, No. 24396, is the son of J. D. Millie, A. R. Grand Champion cow at Minnesota and Montana, in the 1915 show-ring and won the milk and butter contest with Guernseys, Jerseys and Brown Swiss competing with records of 600 pounds butterfat. J. D. Millie weighed 1280 pounds at thirty months old, and is full sister to the World's Champion two-year-old heifer. J. S. BIXBY, : : LISBON, N. DAK.

HOLSTEIN AND GUERNSEY HEIFER AND BULL CALVES. Choice selected promising dairy calves, practically pure Holstein and pure Guernsey, but not registered, nice color. \$20.00 each, all express paid to any point in North Dakota and adjoining states. Order two, you will be so well pleased you will want more.—Meadow Glen Yards, Whitewater, Wis.

JEAN DU LUTH FARM A. R. Guernseys and Red Polls!

Our Motto:
"Correct Type Together With High Production!"
Our Herds number 270 pure breeds
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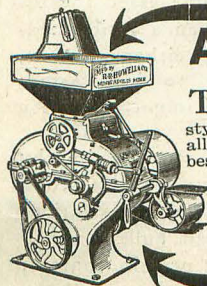
WANTED--A buyer for my year-old Polled Durham Bull. First offer of \$50 takes him. Address: R. E. STRUTZ, Bismarck, N. D.

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Crowded for range, am compelled to sell 40 head of mares and geldings. Address Patrick McDonnell, Ennis, Mont.

ROCKY HILL SHROPSHIRE. Twenty-five head of registered ewes for sale reasonable. Also, a nice smooth bunch of ram lambs and a few aged rams Ernest Palfrey, Hope, N. D.

Wanted, to hear from owner of good Business for sale. Northwestern Business Agency, Minneapolis, Minn.



A ROLLER FEED MILL

WILL GRIND A WAGON LOAD OF FEED FOR 10 CENTS.

THIS is the Famous Howell Roller Mill you have heard so much talk about. The new improved mill for the scientific grinding of grain. Old style Burr and Stone Mills are out of date. Thousands of them are being annually replaced by the Famous Howell Roller Mills. Grind twice as fast as the best burr mill made. Does not heat the feed. Grinds Graham and Rye flour as well as feed. Has big capacity. Requires little power. No burrs or stones to wear out. Guaranteed to last a life time. Made in 13 sizes suitable for any size engine. Save one-half your time, gasoline and money by using a Howell Roller Mill. Write for Catalog F-13. We will send it free, together with the Famous Howell Roller Feed Mill Puzzle.

R. R. HOWELL & CO., Manufacturers, Minneapolis, Minn.

crowd of breeders from all parts of the United States and Canada. 304 members were represented in the roll call, approximately 4000 more by proxy, and a great many others present came in after the roll call was taken.

President White in his opening address reviewed in a comprehensive way the healthy condition of the Percheron trade. He laid stress on the fact that the elimination of importations had led American breeders to give better care to weanlings, yearlings, and two-year olds, and that dealers, purchasing Percherons in this country at earlier ages than had been the custom, had themselves been surprised at the splendid outcome of their American bred colts, when given the same care and attention they had formerly given imported horses. He also called attention to the fee of \$100 for registration of horses imported after July 1, 1916, stating that this had been passed by the Board of Directors in the belief that it was for the best interests of American breeders, in that it was calculated to discourage the importation of the poorer horses.

Mr. White then briefly reviewed the litigation pending against the Percheron Society. He stated that the

cases involved the right of a recording association to control its registrations in such manner as to protect the purity of the breed: that the principle involved was a vital one affecting every record association in the United States, and every breeder of pure bred livestock, and that for this reason the officers felt that the case should be fought until decided by the Supreme Court of the State of Illinois.

Subsequently the breeders present adopted a resolution of confidence in the officers and directors, especially relative to their position in the litigation referred to. This was passed with but one dissenting vote, that one being from the attorney representing the suits against the society.

Secretary Dinsmore in his annual report stated that 9044 registrations had been made during the year, an increase of six and one-half per cent over the preceding year. 140 imported horses were recorded, but only 59 of these were brought over during the past year. Of the total registrations 2014 were registered from Illinois and 1772 from Iowa, so that these two states contributed 41.8% of the grand total. Ohio came third with 747 registrations, Kansas fourth with 653, and Nebraska fifth, with 466 registrations.

847 new members were added during the year and the membership is now in excess of 8000 breeders.

Transfer certificates issued during the year totaled 9467, an increase of 38% over the preceding year. Illinois and Iowa lead in number of Percherons purchased and most of the horses bought in these two states were bought within their own borders. Montana, at the other extreme, purchased 65% of her Percherons from other states.

In the election of four directors for the ensuing three years, C. F. Curtiss of Iowa, W. S. Dunham of Illinois, and U. L. Burdick, of North Dakota, were elected to succeed themselves, and Arthur Colegrove of Girard, Kansas, was elected to succeed John L. DeLancey of Minnesota, who was not a candidate for re-election.

The income of the society for the year was reported as \$52,237.10, and the normal expenditures as \$46,597.01. Extraordinary expenditures due to the special litigation amounted to \$16,939.87.

E. B. White was re-elected as President, U. L. Burdick was elected Vice-President, and C. M. Jones Treasurer. Wayne Dinsmore continues as Secretary. President White was elected to represent the Percheron Society on the National Society of Record Associations.

BALANCED RATION FOR DAIRY COWS

The feeding of a dairy cow should be governed by the cow's capacity to produce milk. By keeping a daily record of each cow's production, the skillful feeder soon finds that some cows in the herd respond to an increased allowance of feed and return a good profit on it, while others are limited in milk capacity and over-feeding them is unprofitable. Profitable feeding requires a thoro knowledge of the individual cows as well as of the values of feeds.

The following general rules are given in a new Farmers' Bulletin of the U. S. Department of Agriculture, No. 743, The Feeding of Dairy Cows, as a guide for winter feeding by the inexperienced feeder:

1. Under most circumstances the cow should be fed all the roughage that she will eat up clean, adjusting the grain ration to the milk production. Only when the cow tends to become overfat should the quantity of roughage be restricted.

2. A grain mixture should be fed in the proportion of 1 pound to each 3 pints or pounds of milk produced daily by the cow, except in the case of a cow producing a flow of 40 pounds or more, when the ration can be one pound to each three and one-half or four pounds of milk. An even better rule is one pound of grain each day for every pound of butterfat produced by the cow during the week.

3. Feed all the cow will respond to in milk production. When she begins to put on flesh, cut down the grain.

For the most profitable milk production, the cow must be fed a balanced ration at the cheapest price such ration can be provided. By balanced ration is meant the combination of such a proportion of nutrients and in such quantities as the cow requires to maintain her bodily functions and as she can utilize in the production of milk. These nutrients are classified as protein, carbohydrates, and fats. Protein is one of the principal constituents of milk; fats and carbohydrates perform much the same functions, that is, produce energy and heat, and in the balancing of a ration are usually classed together. If the cow is given a ration containing an excess of either element, the excess is liable to be wasted; hence the economical importance of a balanced ration.

Corn silage, corn stover, timothy hay, prairie hay, hays from the common grasses, straws of the various cereals, and cottonseed hulls may all be classed as low in protein content, while legume hays, such as alfalfa,

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WANTED to hear from owner of good farm for sale. Northwestern Business Agency, Mpls., Minn.

WANTED to hear from owner of good farm for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

POWER FARMING. The magazine of farming with mechanical power. Send 10 cents for three months' trial subscription. **Power Farming, Box C, St. Joseph, Mich.**

Fence Posts and Small Telephone Poles, Direct from Producer to Consumer. Pay after Inspection, Save Middlemen's Profit. Prompt Service, Personal Attention. Write for Delivered Prices in Carload Lots. **Becker & Vogel, Clarks Fork, Idaho.**

FARMS OR BUSINESS, any kind, anywhere. We locate you free, deal directly with owner. Send for our free magazine. **Western Sales Agency, Minneapolis, Minn.**

CROPS, CATTLE, CREAMERIES. Famous Aitkin County. No other section offers so much for so little cash. Dairy and garden products are abundant and bring high prices. Send for free literature to Arnold, Land Agent, 107, Wolvin Bldg., Duluth, Minn.

WANTED: To hear from owner of farm or unimproved land for sale. **O. K. Hawley, Baldwin, Wisconsin.**

WANT TO BUY LAND? Get in touch with our Company. Cut out the middleman. Maps. Prices. Literature. **Arnold, Land Com'r, 509 Wolvin Bldg., Duluth, Minn.**

LEARN TO SPEAK IN PUBLIC. We train men and women to be good public speakers. Money, position and prominence to be gained thru good platform work. Total cost is only \$5.00. We teach other things—send for outline. **Prin. W. C. Moore, New Egypt, N. J.**

WANTED. Live Foxes, Skunks, Mink and Badgers, any time. **Envalla Stock Farm, Cogswell, N. D.**

"ESIDARAP SNEYRIAD." Read backward. "DAIRYMEN'S PARADISE." That's what Aitkin County is. The balance of our Company's Lands are going fast. Get a home while you can buy cheaply. Write Arnold, Land Agent, Rock Island Railway 107 Wolvin Bldg., Duluth, Minn.

the clovers, cowpeas, soy beans and oat and pea, are classed as roughage high in protein. Grain and concentrated feeds are the chief sources of protein, and the mixture should be made to fit the class in which the roughage belongs.

Compounding a Grain Mixture

A few simple rules for making up a grain mixture are given briefly below:

1. Make up the mixture to fit the roughage available. With roughage entirely of the low-protein class the grain should contain approximately from 18 to 22 per cent of protein, while with exclusively high-protein roughage the grain ration need contain only about 13 to 16 per cent.
2. Select grains that will furnish the various constituents, especially protein, at the least cost, using home-grown grains if possible.
3. Be sure that the mixture is light and bulky.
4. The mixture should be palatable.
5. See that the grain has the proper physiological effect upon the cow.

FINDING THE PROFITS OF THE DAIRY HERD

How to Keep Daily Records

1. The milk sheet is made by ruling off space for each cow. Place the name or number of the cow at the top and record the weight of the milk for morning and evening in the space below. The same sheet may be used to cover a period of three days, a week or a month.
2. Place the record sheet in a convenient rack close to the milk scale and protect with a movable cover to keep it clean.
3. The best plan is to weigh the milk from each cow at every milking and record the weight on the sheet.
4. The daily milk record is the best as it serves both as a guide to the feeder and a check on the milkers.
5. A complete record serves as a basis of economy in the feeding of in-

dividual cows. It requires comparatively little time and is a complete index to the herd, to the feeder and to the milker.

Taking the Sample

1. The best time to take the sample to test is immediately after weighing the milk.
2. Always mix the milk well before taking the sample to thoroly distribute the cream.
3. The best sample bottles are closed air tight to prevent evaporation which increases the test. Label each bottle with the name or number of the cows so the samples will not get mixed.
4. If a sample from a single milking is to be tested take half a pint. Where a composite sample is made from several milkings retain about two tablespoonfuls each time.
5. A composite sample is made up by taking two tablespoonfuls from several milkings and keeping until ready to test.
6. If the sample is held for a time, in warm weather, use a preservative tablet to keep the milk from souring. These tablets are poisonous and need to be handled with care.

Weighing the Milk

1. The milk scale has two indicators. One rests at zero when there is nothing on the scale. The other is to be set at zero when the empty pail is on the scale. This one records the weight of the milk **directly**.
2. Let the pail hang on the scale while recording the weight of the milk.
3. If there is not time to weigh the milk every day, weigh it for three successive days in the month or at intervals as the 5th, 15th and 25th, then to find the average production of each cow, divide the total amount of milk recorded from each cow by the number of days the milk is weighed. Multiply the result by the number of days in the month, which will give approximately the total production for the month.

Making the Test

Any one can readily learn to make the Babcock test. A complete testing outfit, including tester, glassware, and acid, with instructions, can be secured from the hardware store or any of the creamery supply houses for about \$5.00.

To Make the Babcock Test

1. Mix the sample of milk well by pouring from one beaker or bottle to another; then measure into a test bottle with a pipette 17.5 c. c. of the milk as marked on it.
2. Add to each bottle 17.5 c. c. of sulphuric acid (as marked on the measure) and mix well by rotary motion until all of the curd is thoroly di-

gested and a "coffee brown" color appears.

3. Put the bottles into the tester and whirl at full speed two to four minutes.
4. Add hot water to each bottle until the butterfat rises up to the neck.
5. Whirl again at full speed two to four minutes.
6. Add hot water until the butterfat rises half way up the neck of the bottle; then whirl one minute and read the test.

Reading the Test: Read from the extreme point of the top curve to the bottom of the fat column.

The test of the milk is marked in percents on the neck of the test bottle. If the milk test 3 per cent, it means that there are three pounds of butterfat in each one hundred pounds of milk.

Figuring Returns

The net profits from the dairy herd is the difference between the income and the cost of maintenance.

The income includes the value of the butterfat, the skim milk, the calf and the manure.

"The annual cost of maintaining a cow comprises the following items: Cash sundries, cash feeds, farm feeds, labor (man and horse), general expenses, shelter, depreciation, machinery and equipment, herd bulls and interest on investment; the classification is somewhat arbitrary, as in some instances an item of cost might be charged to one class or another with equal correctness. Cash sundries comprise those items for which cash was paid—ropes, halters, veterinary services and medicine. Cash feeds are those purchased for cash, farm feeds those produced on the farm. Labor includes both man and horse labor at the current rate of wages for the month and year, comprising all items of labor performed for and affecting the dairy. General expense comprises entire farm, and is made up of cash and labor expenditures. The total for the farm is then apportioned to the productive enterprises of which the dairy is one.

Machinery and equipment charges are due to the use, depreciation, repairs and interest on the cost of the machinery and equipment of the dairy.

Interest on investment is interest at the rate of 5 or 6 per cent on the value of the cow at the beginning of the year. All items represent actual expenditures on the farms, excepting the charges of shelter and depreciation which are based on averages of all the farms for the entire period."—From Bul. No. 124 Minnesota Experiment Station.

BOTS AND WORMS IN HORSES

are dangerous and should be exterminated without delay, according to Government bulletin. Nothing will do the work more thoroly and safely than our famous Improved Heureka Worm Capsules. They are absolutely reliable and fully guaranteed and highly recommended by professional men. Price \$2.00 for 12 capsules; or with Bailling Gun, one dozen \$3.50, two dozen, \$5.00, four dozen \$8.00. Order today from The Breeders' Remedy Co., 47 Biddle St., Dept. 24, Milwaukee, Wis.



Poultry Department



THE OLD AND NEW BREEDS Michael K. Boyer

When the Plymouth Rock breed made its appearance it practically killed the American Dominique. It had much more to recommend it than the latter variety could boast of. It could not show a better egg record, but it had a carcass that put the Dominique in the shade. Since the Wyandotte has come, and while it has been a sharp competitor of the Plymouth Rock in egg record, it could not offer so large a carcass. But while the Plymouth Rock showed the superior carcass for roasting, the Wyandotte had a new mission—that of growing the best broilers. The Wyandotte at that time was the Laced or Silver variety. At once market poultrymen took to the breed, but did not very much enjoy the black pin feathers. The next step was to create a white variety of this breed and the success has been marvelous. Today the White Wyandottes are popular all over the country. The Black Java fowl has also taken a back seat since the introduction of the Barred Plymouth Rock, and the White Java has been put back by the White Plymouth Rock. The Jersey Blues are a dead issue. So of the American class the really most popular breeds among market poultrymen are the Barred and White Plymouth Rocks, the White Wyandottes, and the Rhode Island Reds.

Of the Asiatics, the Light Brahmas and the Black Langshans are mostly preferred by poultry farmers. The Dark Brahmas have been practically killed by the introduction of the Light variety. The Cochins, altho very good fowls, do not possess sufficient merit for a farm devoted to egg and meat production. The White Langshan never gained much foothold.

In the Mediterranean class the Brown and White Leghorns and the Black Minorcas lead.

In fact, go among the practical poultry farms of the country and it will be found the choice of the owners lies in these breeds: Light Brahmas, Black Langshans, Barred Plymouth Rocks, White Plymouth Rocks, White Wyandottes, Rhode Island Reds, Single Comb Brown and Single Comb White Leghorns, and Black Minorcas. These nine breeds really fill the bill. They are considered the best for market purposes.

The Plish, Hamburgs, Games, and

nearly all the sub-varieties are excellent for individual flocks; that is, small flocks on the farm or in the suburban poultry yards, but the nine breeds I have named are the business breeds of this century, and I say this not in prejudice. I am not antagonistic to the other varieties, and would not wish to harm them in the least, but I fail to find in them the traits so necessary for the success of the practical poultry farms.

BUSINESS METHODS ON THE POULTRY FARM

A good business man aims to have everything convenient and in such a condition that he can realize a profit. Slipshod methods would quickly invite disaster. The men who succeed in business are those who are careful, energetic and enterprising. While this is true of the business man, it is equally true of the poultryman.

The merchant in arranging his store has everything convenient, so that he can quickly place his hands on what he wants. He aims to save time and steps. The poultry man in building his houses should use the same precaution, arranging them so that the most work can be done with the least labor, and in the quickest time.

A long, continuous house, with an alley way in the rear, and feed room, incubator room, shop, etc., on either end, will not only have matters convenient, but will save at least a third of the time and labor of the attendant. Besides, during bad weather he will be almost continually under roof.

Some years ago the colony plan of constructing poultry farms—houses scattered over acres of land, and no fences used—was more or less popular in the United States, but experience proved that the labor attached to such a farm cost more than the good results obtained.

Today the large poultry farms are conducted on the continuous-house plan.

It has been argued that in the long-house plan there is too much danger of the spread of contagion. So it would be were wire only used for partitions which gives a good chance for drafts and besides makes a cold house in winter.

In the improved, up-to-date, long poultry houses, each pen is practically a complete house—solid board partition to the roof. Houses built on

that plan are much warmer in winter than individual houses, and there is no more danger of spread of contagion than in the single houses.

Picture the poor poultryman who in the morning, after a heavy fall of snow at night must shovel a path a long distance to the feed room, and then around about to the different houses before he can attend to the stock. And then look upon the picture of the man who has simply to make a path to the feed room, and, when once there, can promptly attend to the stock and be entirely under shelter.

Think of the man in charge of a colony house farm, who, during a drenching rain, must go from house to house to feed his birds or do his chore—while the attendant in the long house is not only protected from the down-pouring rain, but his fowls are under shelter and eat and scratch as tho there was no disturbance on the outside.

It is remarkable how many steps can be saved in this condensed plan, and as these steps cost money, it seems to us that any other plan is poor economy.

Poultry farms, need not, necessarily, occupy much territory, a few acres will hold the buildings and suitable sized runs for quite a large farm.

The "poultry farm of one hundred acres" does not use its entire space, unless the buildings are scattered—and then think of the situation of such a farm during a blizzard. So much for buildings.

The business poultry farm has every appliance needed for profitable work, and nothing is used that does not represent economy in its use. The business poultry farm harbors no drones. It has no use for hens that do not yield a good profit. Hence, trap nests are used. These contrivances are not only able to tell how many eggs the individual hen lays, but they give the number she lays in the winter, the color of her eggs, as well as the size.

The wise poultryman breeds from the best. He prizes the hen according to her capacity, the same as does the dairyman prize his cows.

It has been argued that trap nests require too much care. Figure up the actual time consumed, and balance with the cost of feeding unprofitable stock, and see if the labor of attending to traps is not well paid for.

Hens seldom lay after three o'clock in the afternoon. On the farm of the writer, the traps are all examined in the morning when the fowls are let outdoors. Occasionally hens are early-morning layers. Then, again, they are inspected at about nine o'clock,

and every hour after that up to about three o'clock in the afternoon, when they are not inspected until closing up at night. If in a continuous house, it will take an attendant about five minutes to inspect fifty nests. In all not much over a half hour each day would be consumed, which, at a good salary, would not cost more than ten cents worth of time a day. What enterprising poultryman would kick at such an expenditure?

The question of feed comes next. For best results in manufacture, the best raw material is used. So with poultry. For good laying, there must be good food. Simply because a certain article of food is cheap, is no argument that it will do to feed. What is wanted is the kind of food that has in it the largest amount of ingredients to make eggs. Such an article is cheap at almost any price. Damaged or burnt grain is entirely unfit for food—not only is it injurious, but it is devoid of the elements necessary for making eggs. Hence, it is dear food even at half the price of good grain. It is poor "economy" to buy something that is cheap in price only.

Then comes labor. Cheap labor is not economical labor by any means, some men are dear at one dollar a day, while others are cheap at twice that amount. A man's work must not be measured by his pell-mell, rush style. It is not how quickly he does the job, but how well.

Can He Succeed?

The other day a gentleman called at our place to get some ideas about poultry farming. He had a hankering after the business, he said, but he was not quite sure if he could succeed in it, and for that reason called.

"Do you think I would succeed?" he asked.

We surveyed the man from head to foot. There he was, a strong, honest looking man, a man not afraid of work—if appearances did not lie.

"Have you any money?" we asked.

"About one thousand dollars, but no debts."

"Did you ever keep poultry?"

"Only on a small scale," he replied.

"Were you successful?"

"Yes, very."

One thousand dollars, a good man, no debts, success in a small way!

We replied, substantially as follows:

"A man's success in the poultry business is not measured so much by the amount of capital he has, nor by the amount of experience, but rather by the amount of grit, patience and business ability he possesses. If you are willing to do hard work, to sow before you expect to reap, to study as you go along, and never to grow out

of patience, you have the most requirements and the capital and experience you can command will come in as valuable assets.

It is certainly a risky job to advise any one to go into the poultry business, unless you feel sure of their ability. The reason men fail in any pursuit is on account of their lack of ability, and we really believe that the right man has yet to fail. We have seen men go into the broiler business and make a miserable failure of it, and we have seen them make a good success.

Broiler vs. Squab Raising

We seem to be living in a squab raising era, and the question has arisen, "will this pigeon boom cripple the regular industry?" We do not believe it will. It has a tendency of driving the squab broiler fad from off the earth, but it cannot enter into competition with the one and one-fourth to two pound broiler.

A great many are lead into this squab business by reading the glaring announcements of the boomers. They are shown how individuals are making from \$3,000 to \$5,000 a year, and that, too, without much investment of capital, and with comparatively no labor. We are taught that there are no risks. If all those things were true how long would it be before squabs would be a glut upon the market? Sooner or later many of these enthusiasts will drop out of business, just as they did when the great broiler boom was on.

Farm Journal says that with good fare and the skill that comes with experience, a return of one dollar per year may be reasonably expected from each pair of breeders in the loft.

John G. Guinins says: "From our own experience we would say that if you average six pairs of young birds a year from a pair of old birds you are doing remarkably well, and much better than nine out of ten breeders are now doing." We saw it stated somewhere that it costs about five cents per month to keep a pigeon. That would leave the cost at \$1.20 for each pair of breeders. The market quotations show that from 25 cents to 40 cents each is paid for squabs.

Farm Poultry says one pair of breeding pigeons, according to the statements we have before us, will produce easily ten squabs in a year, and taking the lowest market quotation, will yield an income of \$2.50. Deduct from that \$1.20 for feed, and there will be a profit of \$1.30 on that pair of birds. That's making money.

Ten broilers would cost to get ready for market \$2.25. That includes cost

of eggs, incubation and feed. The average price the past year in the New York market was 35 cents a pound, leaving an income of \$5.25 for the ten or a net profit of \$3. Some years, however, the market price does not run quite so high, but anyway these figures show that there is as much money in raising squab pigeons as there is in raising broilers. The pigeon men might well argue that there is so much less labor connected with their industry than there is with broiler raising, and so we believe there is, but the squab cannot supplant the broiler from the fact that it is practically a different class of food. Some epicures do not like pigeon in any form, and so there are some that do not like broilers. Weighed on either side, there is no reason why one should antagonize the other. We believe it is profitable to combine the industries.

To sum up, those who engaged in either broiler or squab raising must not imagine that there is no labor attached to it, for there is. No drone can succeed in any business. It is always the wideawake business man who is putting money in his pocket.

Did You Have "Good Luck"

With Your Chicks?

"Luck" with chicks starts with the incubator. If it is properly heated, properly regulated, and properly ventilated, your chicks will start off with vitality. They won't come out of the shell half dead. So many people trust their eggs to a cheap machine, forgetting that it is not only how many you hatch that counts, but how many live and grow.

Start Your Chicks With a Queen Constitution

The Queen has a reputation for hatching strong, healthy chicks. It is built of genuine Redwood—very scarce in these days of cheap substitutes. Redwood does not absorb odors from the hatching eggs. Cheaper woods, and pasteboard lining in iron and tin machines, retain the odors to weaken and kill the hatching chicks.

Queen incubators are not cheap, but they are built to hatch big hatches of chicks that live. Book sent free. Queen Incubator Co., 1193 N. 14th St., Lincoln, Neb.

FOR SALE—Excellent thoroughbred Barred Rock cockerels. Strong, hardy stock from heavy, egg-laying strain. Eggs in season. Book orders early. **Laurel Hill Farm, Westby, Mont.**

FOR SALE. Silver-Laced Wyandottes. Cockerels, \$1.50 a piece. Mrs. Thos. Brady, Lansford, N. Dak.

FOR SALE. Well Bred Up R. C. Reds. First prize winners; cockerels, \$1.25, pullets, 50c. Mrs. John Henderson, Bx228, Beulah, N. D.

White and Columbia Wyandottes, Light Brahmas, and S. C. White Leghorns Over 30 years a breeder. Stock and eggs for sale. **MICHAEL K. BOYER, Box 27, Ham-monton, New Jersey.**

Quality White Rocks

Hatching Eggs and Stock in season. We have the Best. **O. A. Barton, Valley City, N. D.**

BARRED P. ROCKS

Big, Strong, Prize-Winning Stock
Hawkins, Bradley Strain
Eggs and stock in season at very reasonable prices.

PERCY BEALS

BOX 736 : : FARGO, N. DAK.

School and Home



Miss Ura Leader,
Ruraldale, N. D.
Dear Miss Leader:

On account of the pressure of other business I have delayed answering your recent inquiry concerning plant diseases. It is no wonder that the pupils are intensely interested in this study. One disease, rust, cost the farmers many millions of dollars this year.

I think it will be well to preface your discussion of plant diseases with a few remarks on the functions of plants. The destructiveness of these parasites will then be more easily seen. Can you tell how the common diseases interfere with the normal functions of plants?

I wonder, Miss Leader, if you appreciate how important crops really are. You can see how it affects the individual when he has a failure. This is serious, then think what a calamity it would be for the nation providing the failure of crops was nation wide.

Plants are grown for: feed for our livestock, food for ourselves, shelter, clothing, medicinal, and esthetic purposes. There is hardly a human activity which does not rest either directly or indirectly on crops and crop production.

Plants build up organic matter from inorganic materials. Plants make animal life possible. They build up food materials from the mineral and other compounds of the soil and the air. Plants are the great medium between lifeless matter and life. Animal life is dependent on plant life.

Each part of the plant plays some important function in this constructive process. The roots take up water and substances in solution in the water. They also anchor the plant so that it may maintain an upright position.

The stems of the plants spread the leaves out in the sunlight. They convey the food materials taken from the soil by the roots to the leaves.

The leaves take in certain substances from the air. Now in the leaves and in the presence of sunlight these different substances are built up into organic compounds. You might

use this illustration, Miss Leader, to emphasize cooperation.

Among the common enemies which plants have are the plant diseases. They attack all parts of the plant. Some diseases destroy the roots of plants, others the stems and leaves, and still others the flowers and fruit.

When any part of the plant is destroyed it cannot perform its function. It is necessary to keep the plant in a good healthy condition. You should know something of the life history of the different parasites. How are these diseases spread and how may they be prevented.

The spores or "seeds" of most diseases have resting stages. Sometimes this resting stage is passed on the seed. Seed disinfection will be effective in this case. The smuts of wheat, oats, and barley may be prevented by seed treatment.

The spores of corn smut, several of the roots and the root diseases live over the winter in the soil. In order to escape these pests, rotation of crops is necessary. Clean farming will help. You are no doubt familiar with the common methods of preventing flax wilt.

Some diseases spread thru the air. Among the most destructive of these are the rusts of grain. Preventative methods are: clean farming, thorough preparation of the soil, planting early varieties, and the use of rust resisting varieties. This is the hardest class of disease to control, and in most years is by far the most destructive.

For garden crops and fruit sprays are frequently used. The affected plants may be destroyed. Such methods are not practical for large areas. Fortunately most of the common diseases may be controlled. To check them economically one must know their mode of attack. There is a vast amount of literature on this subject and some of the more important articles should be in your library.

The subject of dairying may be nicely presented in public school work.

It is of great importance on account of its volume, but more especially in its relationship to health. Dairy products constitute an important part of our food. They are easily contaminated by diseases. Good work must be done in order to put dairy products on the market in a sanitary and wholesome condition.

Many of the schools are now conducting dairy tests for farmers. Why not introduce this phase of study. Such education will reach far beyond the confines of the school room. If you want to do such work write to the College for complete directions.

Dairying offers many opportunities at this time. But it is seriously handicapped by lack of information and by poor practices. Some of the data one should present in this connection is of a technical nature. It will no doubt be best to send this in printed form.

I was very much interested in your last letter. I think you have accomplished a great deal in bettering agriculture in your community. But there is still much to do. I certainly will be glad to hear from you again.

Yours truly,
O. O. CHURCHILL.

HOW NORTH DAKOTA COUNTIES WERE NAMED

The names of the counties of North Dakota could well be used in the making of an honor-roll of the State's foremost pioneers, early settlers and Indian fighters. Included in the list are members of the Territorial council, early governors, and railway officials who aided in the development of the region. The influence of the early French explorers is shown in some county-names. The origin and significance of these designations has been traced by the United States Geological Survey.

Williams County was named in honor of E. A. Williams, one of the Territorial pioneers, and prominent in

CANCER



and Tumors successfully treated (removed) without knife or pain. All work guaranteed. Come, or write for free Sanatorium book. Dr. WILLIAMS SANATORIUM 3023 University Av., Minneapolis, Minn.

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the political life of the state.

McKenzie County took its name from Alexander McKenzie, a State politician.

Dunn County took its name from John P. Dunn, a North Dakota pioneer.

Billings County was so called in honor of a former president of the Northern Pacific Railroad, Frederick Billings.

Stark bears the name of a Revolutionary hero, Gen. John Stark. Counties in Illinois and Ohio were also named in his honor.

Bowman owes its name to E. M. Bowman, a member of the Territorial legislature in 1883.

Hettinger was given the name of an early settler.

Morton County was named in honor of Oliver P. Morton, United States Senator from Indiana. A Kansas county also bears his name.

Oliver County took its name from Hon. H. S. Oliver.

Mercer bears the name of William Henry Harrison Mercer, an early pioneer and ranchman.

McLean County was named for a prominent State politician, Hon. John R. McLean.

Ward owes its name to Hon. Mark Ward, of South Dakota.

Bottineau County was named for Pierre Bottineau, a Frenchman and one of the early settlers of the Red River Valley.

Rolette was also given the name of an early settler of this valley, Hon. Joseph Rolette.

Towner County was so called after O. M. Towner, a member of the Territorial council.

McHenry County took the name of an early pioneer, Hon. James McHenry.

Pierce County owes its name to the first United States Senator from North Dakota, Hon. Gilbert A. Pierce.

Benson was named for Hon. B. W. Benson, member of the State legislature and banker, of Valley City.

Wells County derived its name from Hon. E. P. Wells, of Jamestown, an old settler.

Eddy County was named in honor of one of the early bankers of Fargo.

Foster was given the name of a pioneer who was prominent in the Territorial legislature, Hon. George L. Foster.

Burleigh County derived its name from Walter A. Burleigh, an early settler and delegate to Congress.

Kidder was named for Hon. Jefferson P. Kidder, prominent in the State's political affairs.

Stutsman was so called in honor of Hon. Enoch Stutsman, a pioneer set-

tlar, prominent in the State's history.

Emmons County derived its name from a pioneer steamboat man and merchant of Bismarck, James A. Emmons.

Logan is one of five counties in the United States named in honor of Gen. John A. Logan.

McIntosh bears the name of another member of the Territorial legislature, Hon. E. H. McIntosh.

Dickey County was named for Hon. George Dickey, member of the legislature.

LaMoure owes its name to Hon. Judson Lamoure, an early settler and a prominent man in Territorial politics.

Ransom County derived its name from Fort Ransom.

Sargent County was named after a former general manager of the Northern Pacific Railroad.

Richland took its name from the character of its soil. Counties in Louisiana, Ohio, South Carolina and Wisconsin were similarly named.

Cass was named for another railroad official, Gen. George W. Cass, director of the Northern Pacific.

Barnes County owes its name to Hon. A. H. Barnes, early Territorial judge.

Griggs County derived its name from Hon. Alexander Griggs, a pioneer of Grand Forks and member of the constitutional convention of North Dakota.

Steele County was named for Franklin Steele, a resident of Minneapolis and a town-site promoter. A Minnesota county also bears his name.

Traill took its name from a representative of the Hudson Bay Company, W. J. S. Traill.

Grand Forks County derived its name from the junction of the Red River of the North with Red Lake River.

Nelson was named for Hon. N. E. Nelson, a prominent pioneer settler.

Ramsey County owes its name to the war governor of Minnesota, Hon. Alexander Ramsey, afterwards United States Senator. A Minnesota county also has his name.

Walsh County took its name from

George H. Walsh.

Pembina County derived its name from the Ojibwa Indian term for "cranberry."

Cavalier County was named for Charles Cavalier, one of the old settlers in the lower Red River Valley.

IMPLEMENT SHED

An attractively covered and amply illustrated pamphlet on implement sheds, written by Prof. K. J. T. Eckblaw of the College of Agriculture of the University of Illinois, is the first of a series of bulletins on farm buildings being prepared by construction engineers for the National Lumber Manufacturers' Association, the series of nine in all on various buildings about the farm.

Prof. Eckblaw says:

"To take ten years as the average life of farm machinery is certainly to be considered conservative. It is entirely safe to assume that the average length of efficient service can be increased to fifteen years providing proper care is given, and the machinery kept in sheds of proper type. It is almost equally safe to assume that the average life of uncared-for machinery will not be much more than five years.

The needs of the average farm for a cheap, easily built implement shed are met by the simple shed type. The framing consists of 6x6 posts set on a light 1:2:5 mixture concrete foundation at intervals of eight feet, the plate



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W. G. Crocker, - - - - Lisbon, North Dakota

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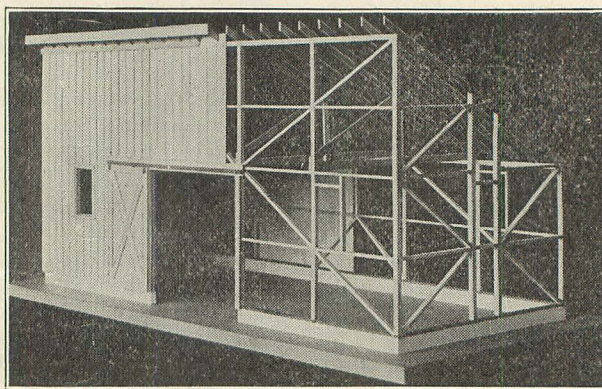
Write us for our plans by which you may obtain a big flag for your school without paying a penny. A postal will do.

NORTH DAKOTA FARMER,
Lisbon, - - - North Dakota

consisting of two 2x6's. Short diagonal braces can be set in underneath between the plate and the post in order to give the plate further support. The rafters for a span of 18 feet should be at least 2x6 and better 2x8, set not less than two feet apart on centers. The wall covering may consist of vertical siding, either 10 or 12-inch boards, with the cracks cov-

return of \$60 for the cream at 30 cents. Herds can be selected that will average 400 pounds of butter fat a year. Such an average is not easily secured.

The starting point in selecting good cows is to weigh the milk morning and evening, and then test it. In this way one can find out just how much the cow is producing. Not to weigh



ered by ogee battens. For horizontal siding studs are necessary; these should be 2x4's, placed not over 3 feet apart. Either dropsiding, German or novelty siding or ordinary weather-boarding may be used satisfactorily, but the latter is somewhat light for a building of this kind and would probably not be as durable as the others mentioned."

In taking trees from the nursery or forest, preserve all the roots and fine rootlets possible. Avoid breaking them in shaking off surplus earth; and dig them out instead of pulling them up. Carefully guard the roots from any exposure to sun or wind. Give the roots a deep and broad bed of soil to start and grow in. Spread out the roots well and naturally and set them only a trifle deeper than they grew in the nursery. Fill soil well in under and around the roots and firm by pressure.

SOME OF THE SIMPLEST PRINCIPLES OF AGRICULTURE

By Chore Boy

Dairying

SUCCESS in dairying depends largely on selecting the right kind of cows, and giving them good feed and care. The average cow gives only about 140 pounds of butter fat which is not enough to pay for feed care. At 30 cents this amounts to \$42.

It is not hard to select quite ordinary cows that will average 200 pounds of butter fat which means a

the milk is just about like running a threshing machine without registering the bushels of grain threshed. The milk can be weighed for three successive days each month if one does not feel like weighing it every day.

There are two types of cattle used in dairying. The so-called dairy type to which belong the Holstein, Jersey, Guernsey, and Ayrshire. Then the dual purpose type, the Red Poll, Brown Swiss and some Shorthorns are of this type.

The dairy type cattle need to be well-housed and to have good care. Beef cattle can rough it pretty well but not so the dairy cow.

The cow that is to give a lot of milk must be well fed. The material out of which the milk is sold must first be supplied the cow in the feed. This means that the cow must be given foods from which milk can be made. Straw and corn stover contain but little of the milk making material. Alfalfa and clover as well as the grains are rich in it.

Silage is also a very good food for the dairy cow. It is a succulent feed and has a good effect on the digestion. Dairying is one of the best means of keeping the fertility on the farm as there is very little plant food in milk and still less in butter.

Plant Diseases

Most plant diseases are caused by parasitic plants growing on the plants. For instance, smut is a disease that attacks grain and grass crops. The black powdery mass which we call the smut is spores which act like seed in that each one can develop into a smut plant as follows:

The smut spore or seed of wheat for

instance sticks to the kernel of wheat. When the wheat is sown and germinates the smut spore also grows sending out a slender stalk that grows into the wheat plant. As the wheat plant grows the smut plant keeps growing inside it. The smut plant having no roots or leaves takes its nourishment from the wheat plant. When the wheat plant begins to form kernels the smut plant sends a branch into each wheat kernel that takes the nourishment that the wheat plant had prepared for making kernels out of and uses it for making smut spores. There are two kinds of wheat smut, the loose smut and the bunt or stinking smut. The latter fills the inside of the kernel with smut spores but the kernel retains its shape. In threshing some of these kernels are broken and the smut spores then stick to any kernel of wheat that it comes in contact with and grows when the wheat germinates. The loose smut forms spores out of the whole kernel and they are not enclosed but are free to be carried by the wind. When one of these spores gets under the chaff and onto a kernel of wheat it sends a little sprout into the wheat kernel. When the kernel of wheat germinates this smut sprout grows too.

Smut also attacks oats and barley. Prof. H. L. Bolley of the North Da-

kota Agricultural College has worked out the formaldehyde treatment for smut. He found that a solution made up of 16 ounces of 40% formaldehyde to 40 gallons of water was strong enough to kill a smut spore but not strong enough to destroy the germinating power of the grain.

The treatment consists in dipping the grain into the formaldehyde solution.

This treatment is effective for the bunt or stinking smut on wheat and for the oats and barley smuts. It is no good against the loose smut on wheat as it has grown into the kernel. It can be killed by the so-called modified hot water method. This consists in first soaking the wheat 7 hours in cold water and then for 10 minutes in water at 137 to 133 degrees. In order to keep the water from being cooled by putting in the cold grain first dip it into water 110 to 120 degrees F. and from that into the water at 132-3 degrees. If the water is warmer it kills the wheat and if colder it does not kill the smut. This method kills all kinds of smut but being quite difficult is only recommended for the loose smut on wheat.

Corn smut is not carried on the kernels. The spore of the corn smut falls on the ground and lies there till spring. Then it grows, sending up

a little stem that throws up spores that are blown by the wind. When they land on a corn plant they grow and form a smut mass. The smut may develop on any part of the corn plant. The remedy for corn smut is not to grow corn on the same land oftener than every three or four years.

Rust is another plant disease that is caused by a parasitic plant.

The rust plant grows from a reddish or black spore. When one of them settles on the leaf of a plant, and especially if the day is warm and damp, it sends out a growth that grows into the leaf and there develops a rust plant that takes the sap of the plant and makes it into spores. The first ones are reddish, and later on black ones appear. So that black rust is only a later stage of red rust. The red rust spores can blow onto another plant and start another rust plant. The black spores are for living over winter. These black spores must get onto some other plant and there develops red rust which when blown onto a grain crop causes rust. As far as known the barberry is the plant that the black rust spore must get onto in order to develop the red rust. So far no remedy has been discovered for rust. An attempt is being made to develop a rust-resistant wheat. Some progress has been made.

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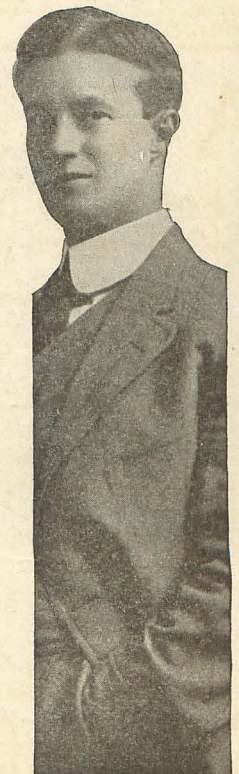
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Seasonable Receipts

Mrs. Sadie Baird, Editor

Steamed Apples

Take firm, tart apples, pare and core and stick in each four whole cloves. Have water and sugar and sliced lemon in a drip pan on the stove. When the sugar is well dissolved put in the apples, cover and cook slowly. When done they should be tender but firm and a clear, golden color. Serve hot or cold.

Cream Candy

Six cups sugar, seven tablespoons vinegar, add enough water to dissolve sugar. Cook over a hot fire; do not stir. Test in cold water. When it threads, take off fire, cool and pull until white. Set aside to cream, which will take twenty-four hours. More or less sugar may be used, but always have one more spoon of vinegar than cups of sugar.

Stuffed Potatoes

Bake potatoes in jackets, and when done, cut off one end and scoop out the potato. Season with salt, pepper, butter, and a little milk. Small bits of any cold meat and a little onion may be added. Beat very light, then refill the hulls and return to oven, and brown lightly.

Health Bread

Two cups graham flour, one-half teaspoon of salt, one teaspoon of soda. Mix dry. One cup sour milk, two tablespoons molasses. Bake forty minutes.

Potato Puff

Two cups of mashed potatoes and one tablespoon of butter, one egg, one cup of rich milk with a dash of salt and pepper; beat all together; bake in popover pans in a quick oven, until brown.

An Economical Cake

Cream together one cup of sugar, one-half cup of lard, then add slowly one cup of buttermilk, stirring thoroly. Sift together three or four times two cups of flour, one teaspoon of cinnamon, one of nutmeg, one-half teaspoon of cloves, one teaspoon of soda; then stir in one cup of seeded raisins and English walnuts. This is a very good as well as inexpensive cake.

Iced Chocolate

One square chocolate, three teaspoons sugar; melt together. Add one cup boiling water, boil up and add a few drops vanilla and two cups cold milk. Keep in refrigerator until ready to use.

Fondant

Four cups white sugar, two cups water, one teaspoon vinegar or salt-spoon of cream of tartar. Place ingredients in a granite or aluminum saucepan, stir until sugar dissolves, but not a moment longer. As it boils, a thin scum of crystals will form around edge of pan; wipe away with cloth or brush without touching the

boiling sugar. Continue to do this for if the crystals form, the candy will sugar. Watch carefully after the large bubbles begin to rise. Test it by dipping a small stick into the candy then into the water; if the sugar which adheres to the stick will form a soft ball, it is done. Pour on a slab or platter, cool, then beat until it creams, knead thoroly and mould. This can be used as a foundation for chocolate creams, cocoanut balls, nut and fruit candies.

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Pure Extracted honey—the most healthful and wholesome of all sweets. Our honey is put up in a neat clean manner, and is strictly first class in every way. Price: 2-60 lb. cans in case, \$12.60; 1-60 lb. can \$6.60; 6-10 lb. pails in case, \$7.20; 6-5 lb. pails in case \$3.75; single 10 lb. pails \$1.25; single 5 lb. pails \$.65.

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DIRECT FROM OUR FISHERIES AT ONE-HALF THE COST OF BEEF OR PORK. A delicious change and a greater food value. EAT FISH, Baked, Broiled, Boiled or Fried. Guaranteed NONE BETTER. HERRING in sacks, 100 lbs., \$3.50, 50 lbs., \$1.85. PICKEREL, per lb., 7½c; WHITEFISH, 8c; PIKE, 11c; SHIPPED IN STRONG BOXES, HERRING, 100 lbs., \$4.00, 50 lbs., \$2.15; PICKEREL, per lb., 8½c; WHITEFISH, 8½c; PIKE, 11½c; SALMON, 14c; COD, 13c; HALIBUT, 14c. Send orders direct to DULUTH, MINN., and if you wish your shipment made from either of our BRANCHES at FAR-RO, N. D., ABERDEEN, S. D., or DES MOINES, IA., add 50c per hundred pounds to above prices.
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Salad Dressing

(After making Angel Food)

Yolks of one dozen eggs, well beaten, one-half cup sugar, teaspoon each salt and mustard, one-half cup vinegar. Cook until real thick in a double boiler (stirring occasionally.) Then remove from fire and beat well till cold, adding a little lemon juice,

dash of red pepper and paprika and whipped cream.

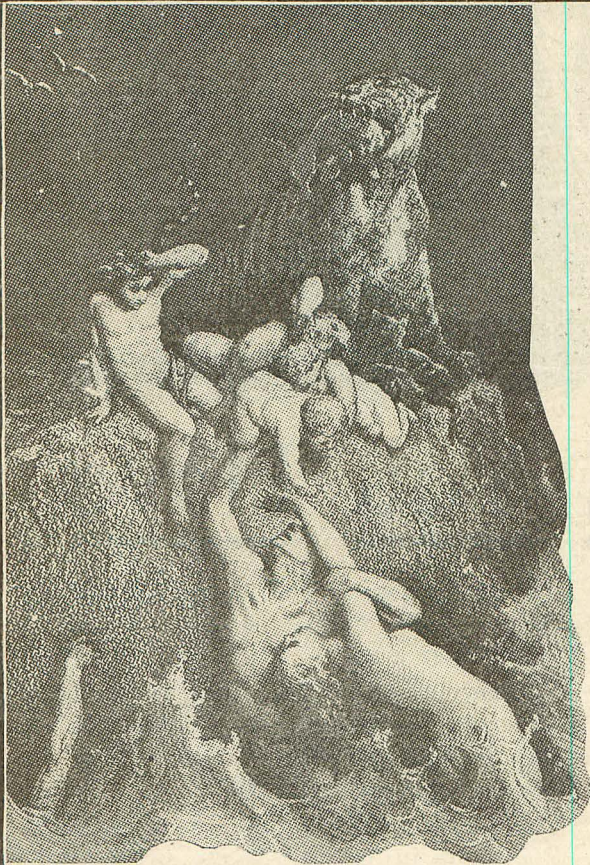
To Remove Ink and Fruit Stains From the Floor

Wash the stained part with cold water and then cover with baking soda, rubbing it in gently with the hand. When dry, wash off the soda

and you will find the stain has disappeared as if by magic.

Mending Gloves

Always use cotton thread instead of silk, in mending gloves, as it will not pull the kid. Mend with a button-hole-stitch and the tear will scarcely be noticed.



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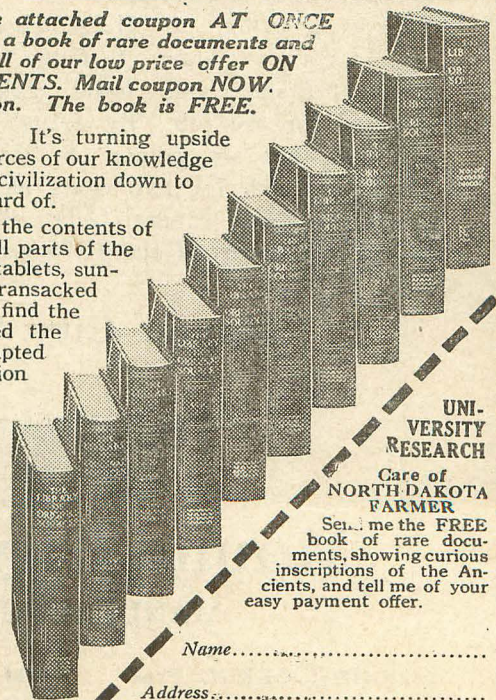
DO YOU KNOW that there has been dug up from the ruins of old Chaldea a complete story of the Flood—the same in every detail as Moses' account in Genesis—and that it was written thousands of years before his version appeared? Hardly one in a million has ever had an opportunity of seeing this startling story—**HAVE YOU?** But it is one of the many thousand curiously interesting accounts in

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Here are two cans of Paint.

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One will cost you \$2.75 per gallon. The other will cost perhaps as little as \$1.75 per gallon, but the Mound City Horse Shoe Brand at \$2.75 per gallon will cost you less in the end.

Reason? Simple enough.

Because a gallon of "Horse Shoe Paint" will cover a larger surface than the cheaper grade, and fewer gallons are required for the job. By actual test you will find that six gallons of "Horse Shoe Paint" (enough for two coats on a house measuring 2100 square feet) will go as far as ten gallons of the \$1.75 kind.

In other words, you invest \$16.50 in "Horse Shoe Paint," against \$17.50 in the cheaper grade.

Not only this, but the Horse Shoe Brand is bound to outwear the other two to one, making the Horse Shoe Brand far more economical in the end.

You save on the total cost of material. You save in labor, because of the long life of the Horse Shoe Brand.

You save once more in the satisfaction of knowing that your property is beautified and protected with the highest quality of painting material that modern skill and science has yet developed.

AGAIN!! Mr. Property Owner:—
Which will you have?

Mound City "Horse Shoe Brand" Paint

Sold only by

Paint, Hardware, Lumber and Drug stores

Write for name of your nearest dealer

Mound City Paint & Color Co.

MANUFACTURERS - ST. LOUIS, U. S. A.

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E. H. DYER, Sec.